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GEORGE W. YORK,
Editor.

CHICAGO, ILL., MARCH 20, 1902.

FORTY-SECOND YEAR
No. 12.

WEEKLY



APIARY OF H. W. CONGDON, OF HARDIN CO., IOWA.
—(See page 178.)

THE AMERICAN BEE JOURNAL.

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R. C. Aikin, F. Greiner, Emma M. Wilson,
A. Getaz, and others.

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To promote and protect the interests of its members.

To prevent the adulteration of honey.

To prosecute dishonest honey-dealers.

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A Celluloid Queen-Button is a very pretty thing for a bee-keeper or honey-seller to wear on his coat-lapel. It often serves to introduce the subject of honey, and frequently leads to a sale.

NOTE.—One reader writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of the buttons] as it will cause people to ask questions about the busy bee, and many a conversation thus started would wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."

The picture shown herewith is a reproduction of a motto queen-button that we are furnishing to bee-keepers. It has a pin on the underside to fasten it.

Price, by mail, 6 cents; two for 10 cents; or 6 for 25 cents. Send all orders to the office of the American Bee Journal.



Weekly Budget.

MR. A. I. ROOT is taking a ride—on a hobby. This time it is starting plants from cuttings in a greenhouse.

THE TWO Roots and Dr. Miller have much to say in Gleanings in Bee-Culture about a "personal devil." Do they speak from a "personal" acquaintance?

THE APIARY OF H. W. CONGDON.—Accompanying the picture shown on the first page this week was the following:

As I am always interested in reading the reports of other bee-keepers, I have thought perhaps a report from me would be of some interest to others.

I bought 2 colonies in the spring of 1900, in old-fashioned hives, increased to 4 by natural swarming, and 21 days after I drummed out of the old into new hives. I took off about 120 pounds of honey in the fall, and bought 6 more colonies, 5 in 8-frame standard hives, one in an old shoe-box, and came out last spring with 8 colonies, having lost 2, and bought 23 more in April with 10 extra hives, 2 supers on each hive, and a lot of supplies and old truck for \$75. Six colonies were in box-hives. I have sold about \$70 worth of honey, and have about 100 pounds on hand for our own use.

All the time I can get to work with my bees is in the morning and evening, and sometimes a few minutes at noon.

I clip my queens, and during swarming-time I hired a small boy to stay in the yard from 8:30 to 3:30, and paid him extra for every queen he would catch, and he very soon got to be an expert at it.

Through the kindness of the owner, I keep my bees in the private park of one of our wealthiest citizens. I have a 4-foot poultry fence around four or five rods, and keep the gate locked, and the bees molest no one. I keep them supplied with fresh and salt water all the season. The yard is right across the street from my house. My son and I have a camera, and have taken up amateur photography. I enclose a picture of the bee-yard. I think I have a very cosy place for the bees, and enjoy working with them.

I get many good points and hints from the "old reliable" American Bee Journal; I could hardly keep house (or bees) without it.

H. W. CONGDON.

THE ONTARIO ASSOCIATION.—In the Canadian Bee Journal we find this interesting historical sketch of the Ontario Bee-Keepers' Association, by Mr. R. McKnight, one of its organizers and an aparian writer of no mean ability:

It was, I think, in 1879 the Association was organized. The year previous, D. A. Jones rolled ten tons of honey into the exhibition at Toronto, for which he was awarded the gold medal. This created a furor in the country. The next year he called a bee-keepers' convention to meet in the City Hall, Toronto, while the exhibition was being held. In response to that call bee-keepers and prospective bee-keepers gathered in, to sit at the feet of the Gamaliel of apiculture and learn the mysteries of bee-keeping. That was the most numerously attended bee-keepers' meeting that ever was held in the Province. The hall was crowded with people during the three days of its session. The writer had the honor of occupying the chair. That meeting resulted in the formation of the Ontario Bee-Keepers' Association. D. A. Jones became president; I was elected secretary and treasurer. The president, secretary, and the Rev. W. F. Clarke, were appointed to formulate a constitution and by-laws for its government. (When

the Association was incorporated and became the recipient of an annual money grant, it was my privilege to modify its constitution and by-laws to meet the new condition of things. I am pleased to know that it has not been found necessary materially to change these since.)

We had no organ at this time. One of our members edited a weekly paper published in the town of Welland; with him we arranged for the use of one of its pages to be devoted to bee-literature. The conditions were—we were to supply the "copy" and I was assigned the duty of editor of the bee-department of the Canada Farmer (long defunct). By and by, D. A. Jones started the Beeton World, to which we transferred our patronage. Shortly after he started the Canadian Bee Journal—then the only weekly bee-journal in America—with the exception of the British Bee Journal the only one in the world. The Journal once became, and still is, the organ of the Association.

I remained secretary-treasurer till I became president, when I resigned the secretaryship, but continued treasurer up till 1892, when, on my resignation of that office, the Association very generously presented me with a gold watch.

Mr. McKnight's memory hardly served him well when referring to the starting of the weekly Canadian Bee Journal. Vol. I, No. 1, of that paper is dated April 1, 1885—4½ years after the American Bee Journal had begun to be published weekly, and 9 months before the British Bee Journal began to be a weekly. Previous to January, 1881, the American Bee Journal was a monthly, and up to January, 1886 (and we know not for how long before), the British Bee Journal was a "fortnightly." The Canadian Bee Journal was published weekly for about five years, then was issued for a time as a semi-monthly, and finally as a monthly, which it is now, and has been for many years.

MR. W. A. PRYAL, of Alameda Co., Calif., writing us March 5, said:

"We are having glorious rains here. The year bids fair to be as prosperous for the tiller of the soil and the deliver for gold as any we have ever had. I am speaking for the central and the northern portions of the State. The south has had rain, I am pleased to say, but not in as liberal quantities as the agriculturist, etc., could wish. Still, they may have more in that portion of the State. Here all vegetation is looking up grandly; some sorts of fruit-trees are in bloom."

BUCKWHEAT CAKES seem to be in season at Stenog's home. He says in Gleanings in Bee-Culture:

That song for bee-keepers, music by George W. York, words by Eugene Secor, "Buckwheat Cakes and Honey," was received just as the familiar thump, thump, thump of the family batter-paddle was doing its work in making such cakes, rendering the song very appropriate. It is good all through, and all who have music in the house should have a copy.

Went Like Hotcakes

A Nebraska customer when ordering a new supply of our fine Alfalfa honey in 60-pound cans, said: "The last I got went like hotcakes." So it does.

More people might do well—they would order this honey, or basswood, and sell it. It not only goes off "like hotcakes," but it is mighty good on hot cakes.

See honey-offers on page 186.

GEORGE W. YORK & CO.,
144 & 146 Erie Street, CHICAGO, ILL

AMERICAN ESTABLISHED IN 1861 BEE JOURNAL

THE OLDEST BEE-PAPER
IN AMERICA

42d YEAR.

CHICAGO, ILL., MARCH 20, 1902.

No. 12.

Editorial.

The Home Honey Market.—On page 182, Mr. C. P. Dadant has an article that will bear reading over several times, or until it is thoroughly learned. We have never been quite able to understand just why it is, that so many honey-producers have not yet been able to see that almost invariably the most profitable market for honey is the home market—right among the people living not further perhaps than five or ten miles from their apiaries.

As Mr. Dadant well says, honey is different from wheat, corn, potatoes, pork and beef. There is always a settled city market for such products, these having become staples, and thus in constant demand. What is needed now is for every bee-keeper to push the sale of honey everywhere until it, too, shall be in demand, equal, if possible, to that of soap and bread.

Small bee-keepers need never fear that the city market will become bare of honey, especially of extracted; for there are the large producers of honey, or specialists, who produce by the car-load—they will keep the large centers of population well supplied with honey. But there is often little sense in any bee-keeper who produces a ton or less, ever shipping it to a city market. There is scarcely a town or village but what, if properly solicited, would use several tons of honey on their tables in the course of a year.

Most people are fond of honey. Only convince them that it is the product of the bee, and they will not be long in purchasing, and also in consuming it.

Bee-keepers need to get close up to the editors of their local newspapers, and induce them to give to their readers information on the use of honey, which information the bee-keeper would need to furnish. It would pay to invite the editor to visit the apiary about the time of taking honey off the hives, and show him how that part of the work is done. Of course, no true bee-keeper would be so forgetful as not to present the visitor with a liberal sample of the sweet product of the hive.

Mr. Dadant has given much good advice in his article on another page, which, if followed, will make this particular number of the American Bee Journal of immense value. There is often almost as much in selling a crop well as there is in getting the crop in the first place—whether that crop is honey or cattle.

An "Infallible" Method of introducing queens was given on page 670 (1901) by A. D. D. Wood, who says there: "This may not be my own invention, yet I have never seen it mentioned." This plan will be found in "A Modern Bee-Farm," by S. Simmins. On page 160 of the 1893 edition, after emphasizing the point that where food is given to a queen confined in a cage, "honey from the same hive should alone be supplied," he goes on to say, "and on no account may any of the bees which accompanied her be placed in the cage; but it is advisable to give her an escort of some half-dozen young workers picked from the comb just after hatching, and taken from the hive in which the queen is to be caged."

This gives occasion to say that this book, written by so practical a man as Mr. Simmins, is well worth possessing. Among the many good things it contains may be found the "Simmins fasting method" of queen-introduction; and the bleaching of sections, which has had prominent mention in this country within the past few years was probably first given in this book nine years ago.

Discrepancies Among Bee-Writers is the underlying text of a discourse from G. M. Doolittle in Gleanings in Bee-Culture. He says a rule in arithmetic and a rule in bee-keeping are different things. Two and two make four always and everywhere; what is true about bees in one locality or season may not be true in another locality or season. So two men may both be right from their own standpoints while appearing to hold widely different views.

The feeding of meal in spring is useless if not mischievous, says A. It is a good thing to give the bees in spring some substitute for pollen, says B. Both are right, although apparently in direct contradiction. In A's locality there is plenty of pollen in spring, either from early flowers, or else left over from the previous year. In B's locality the bees are short of pollen in spring, with no early flowers to yield it. One says put on sections early; another says not till swarming. Both right: one wants to discourage and the other to encourage swarming. So with other things. But the wise reader will get the views of all, and use what best fits his own case.

Instead of ceasing to read the bee-papers because in the nature of the case there will be real or apparent discrepancies, Mr. Doolittle says:

"One hundred dollars per year would not hire me to cease from reading on this subject, for it is to this reading that I owe nearly all the knowledge I possess relative to bee-keeping."

Dangers of Inbreeding.—Since interest has been generally awakened to the importance of striving for improvements in bees, considerable as been said about inbreeding. Some have cited examples from Nature to show how she abhorred inbreeding in the vegetable kingdom, etc. Others have cited examples of important results obtained from inbreeding, and from their writings one would judge that not only should no pains be taken to avoid inbreeding, but that it is the proper thing in the hands of every one. Still others have held that only as necessity compelled should inbreeding be resorted to, and that good results were obtained in spite of, rather than on account of, the mating of two beings closely related.

In the Bee-Keepers' Review, F. B. Simpson discusses the matter at considerable length, and he certainly can not be considered as encouraging inbreeding in the hands of the every-day bee-keeper. While admitting that "inbreeding has done us remarkable service in improving our domestic animals," he thinks the chances of success are so much against it that only one man in a thousand will be successful, and that man in only one of a thousand cases. He says:

So far as I have been able to learn, no man of unprejudiced mind has yet claimed that inbreeding will produce anything that can not in time be produced without it, provided we can supply a sufficient quantity of unrelated individuals. In breeding the domestic animals, the great element of *time* enters into the matter to such an extent that inbreeding has proved a practical necessity; yet there is no reason to believe it will be likewise with the bee, for the generations are too frequent. Also, as inbreeding can not be individual, but only collateral, in bees, it is doubtful whether it will have anything like the same effect for good and likewise for evil as in the higher animals. Furthermore, we have as yet no proof that insects can be made to vary (hereditarily) in as great a degree as the higher animals. It is true that the same laws of development run through the entire system of animated nature, but in her communal relations as against the individual, besides the fact of parthenogenesis, places the bee on a basis decidedly her own.

On the whole, he thinks it would be a good thing in actual practice for bee-keepers to let inbreeding alone until something has been ascertained experimentally as to its results among bees.

The Large White Clover (Colossal Lading) which has been highly spoken of in foreign journals stands a chance of being tested in this country, as the Gleanings in Bee-Culture people have secured some of the seed. It may be a great improvement, but too much should not be expected from it. It is not likely that it is large enough to be harvested as hay, and without this it may not be more valuable than the common kind.

Convention Proceedings.

Report of the Michigan Bee-Keepers' Convention.

BY JAS. A. DART, SEC.

(Continued from page 165.)

"BUILDING UP COLONIES IN SPRING FOR THE HONEY CROP."

Mr. Chapman says he puts away more bees than he expects to winter. He unites in the spring, taking two light colonies, puts on one queen-excluder, then puts the other colony on top, removing the queen from the top one. He says there is not much use in uniting three or more weak colonies; it is no better than each one separate.

Mr. Hutchinson agrees in this. He spreads brood later, but only as they can furnish proper heat.

Mr. Kitson says those colonies that have the most honey over winter work best in the spring.

Mr. Hutchinson in earlier days practiced stimulative feeding, but if left with sealed brood they will do better.

Mr. Coveyou advises in a cold snap in spring to sprinkle sweetened water in the front of the hive to save the bees going out and getting chilled. He uses an atomizer in the evening.

Mr. Kirkpatrick sees that the covers are tight, and that no heat escapes.

It was suggested that some one use an empty comb filled with water, or use a sponge for water in spring.

Mr. Hilton and Mr. Hutchinson suggested that in feeding one can put the syrup outside near the apiary, and after the first day it is safe from robbing.

COMB HONEY OR EXTRACTED?

"Which is the more profitable, working for comb honey or for extracted?"

Mr. Kitson says extracted is the most profitable, as the nights are too cold so far north to build comb.

Mr. Pinnell says there is more money in extracted at 8 cents than comb at 14 cents so far north; and counting extra work it is much more profitable. He says this year he run 20 colonies for extracted and 30 for comb, and got more money out of the 20 at 8 cents than the 30 at 14 cents.

Mr. Chapman says he got almost as much comb honey as extracted, but the weather was warm. He says in three-fourths of the years there is more money in producing extracted honey; the expense is no more for comb, as packages cost less; but he suggested that with a local trade the cans can be returned.

Mrs. Morrow says this past was the best year she has ever seen for selling honey.

Mr. Smith thinks the locality determines. He is in the coldest place in northern Michigan, and can't do well working for comb honey.

TOO MUCH POLLEN IN THE BROOD-NEST.

"Are we ever troubled with too much pollen in the brood-nest?"

Mr. Smith says it may bother the bees, but it does not bother him.

Mr. Chapman advises putting comb containing too much pollen in the center of a good brood-nest, the pollen will disappear.

SECOND DAY—JAN. 2.

Pres. Hilton, having contracted a hard cold, left for home, and the meeting was called to order by W. Z. Hutchinson.

CLIPPING THE QUEEN'S WINGS.

"Does the clipping the queen's wings shorten her life?"

Mr. Chapman shortens her life himself, and does not try to see how long she will live; also Mr. Kirkpatrick. Mr. Coveyou says he sees no difference, and others agreed.

E. E. Brown says he had a clipped queen live six years.

"How do you clip the wings?" was asked.

Mr. Kitson holds the queen by the wings on one side, and clips both wings on the other side.

Mr. Chapman, Mr. Kirkpatrick, and Mr. Pinnell, pick the queen up by the thorax.

Mr. Coveyou clips just at the time of fruit-bloom, when laying freely, and when workers are out gathering. He takes hold of the legs and wings on one side.

Mr. Smith advises clipping earlier in the spring; and holds the queen by the thorax.

Mr. Hutchinson picks her up by the wings on both sides, and then clips one wing.

Mr. Bartlett uses a queen-clipping device.

SHALLOW FRAMES VS. STANDARD IN EXTRACTING.

"In the production of extracted honey what preference has shallow frame over standard Langstroth?"

Mr. Coveyou says if any advantage it is that one can uncap with one stroke, and might get more uniform color of honey.

Mr. Chapman sees no advantage.

Mr. Smith prefers the Heddon frame (shallow), for the same reason given by Mr. Coveyou.

Mr. Kirkpatrick likes the Langstroth frame as there are less frames to handle.

Mr. Brown says he can handle two shallow frames quicker than one Langstroth, and bees go up quicker in the spring. He thinks deep frames make the honey darker. He uses one frame less than the super's size, as 9 in a 10-frame super.

Mr. Chapman starts the bees up in 15 minutes after putting on the super. He puts a frame of brood in the super and waits until the bees are ready to go up. He extracts when two-thirds capped, and thinks 7 frames in an 8-frame super is too wide. He likes 9 in a 10-frame super, and wants 14 to 20 frames of brood, thus making the queen do all she can in one year; then he kills her.

Mr. Kirkpatrick thinks there is a disadvantage in the shallow frames. He can't bait bees up. He uses 7 frames in an 8-frame super.

Mr. Coveyou doesn't like to put the brood up, as it makes darker honey above.

Mr. Chapman thinks it is a waste to force the queen to fill the top and corners of frames with brood. He gets better results with 50 strong colonies than 100 less populous.

Mr. Pinnell thinks all frames in the yard should be of the same size.

BEST DEPTH FOR BROOD-FRAMES—QUEENS.

"What depth frames are best for the brood-chamber in this region?"

Mr. Coveyou has two sizes—the Langstroth for old hives and the shallow for swarms.

"Is the queen most valuable before one year old, or afterward?"

Mr. Coveyou says she is best the second year.

Mr. Dart says he finds queens as good the second as the first year.

"How is it best to find a queen in a populous colony?"

Mr. Chapman looks till he finds her, in the middle of day, in July.

Mr. Hicks asked why he hunts in July.

Mr. Chapman said because he hunts them up to kill them except in the very best colonies. He thinks drones are as important as queens, and uses the best queens for rearing drones.

BEST BEES FOR THE NORTH.

"What is the best bee for the North—Italians, Blacks, or Carniolans?"

Mr. Kitson says the Carniolans are more gentle.

Mr. Chapman gave the Carniolans good trial, but gave them up. He says they are the hardest bees, but they rear drones anyway; will tear out comb and make drone-cells; also swarm too much.

Mr. Kitson says Carniolans build up quickly in spring.

Mr. Coveyou says Carniolans are good to get up an apiary quickly; then change to Italians.

General experience: Carniolans swarm too much.

Mr. Hutchinson says Carniolans build up quickly but swarm too much; he doesn't think them more gentle.

INBREEDING OF BEES.

Mr. Smith has inbred for 20 years, and takes no stock in the talk against it.

Mr. Hutchinson says there is not much danger, as there are so many bees in the country.

Mr. Coveyou says beginners have a good deal to do in getting hardy bees, by their losing the weaker in winter and breeding from the remaining strong ones.

Mr. Pinnell thinks it best to keep good strain.

Mr. Chapman thinks it is better to cross. He says a hybrid queen did good work, but he tried rearing from one and could not duplicate her. He thinks it safer to buy a few good queens.

PLACE OF MEETING—ELECTION OF OFFICERS.

It was moved by Mr. Chapman that the next annual meeting be held at Lansing, at a time to be set by executive committee. The motion was seconded, and carried.

The election of officers resulted as follows: W. Z. Hutchinson, president; Geo. H. Kirkpatrick, vice-president; James A. Dart, of Petoskey, secretary; and Samuel D. Chapman, treasurer.

Former treasurer, W. Z. Hutchinson, reported a balance on hand of 65 cents.

LOCATING OUT-APIARIES.

"What are the essential points to be considered in locating out-apiaries?"

Mr. Chapman advises locating so that bees will take advantage of all of the pasturage; not too close to a small patch, as the bees will work that to death. Pick the location so that there is good pasturage in equal distances surrounding. He prefers three miles between good-sized apiaries, the distance depending on the pasturage and the number of colonies. He says he gets little basswood now, mostly raspberry to take its place; uses a tent in the out yard, and pays farmers \$10 a year for a location in an orchard, and gives the farmers all the honey they want.

Mr. Kirkpatrick says 3½ to 4 miles bees worked successfully on basswood.

Mr. Smith never saw a bee over two miles from home.

Mr. Coveyou has had bees work successfully 2½ miles, and a neighbor 4 miles away had bees come four miles to his place.

INCREASE BY SWARMING OR DIVIDING.

"Should we increase by natural or artificial swarming? Which is the better practice to get white honey? and what method?"

Mr. Chapman takes the queens away after the spring flow after queen-cells are capped. He takes a comb having capped queen-cells, making increase in that way. He has no swarming.

FRUIT-GROWERS AND BEES.

"Can a fruit-grower afford to be without bees, provided there is no bee-keeper within two miles of his orchard?"

Mr. Woodman says some fruit-growers in his region say the yellows are spread by bees, but he had one neighbor raising pickles who had a double crop while the apiary remained there; that it would be better for a fruit-grower to keep bees.

Others said they would keep bees, and that honey-bees are earlier at the work and more to be depended upon than other insects.

The afternoon meeting was enlivened by music. A quartet of Petoskey singers beautifully sang, "The Hum of the Bees in the Apple-tree Bloom," and "Buckwheat Cakes and Honey."

Emmet Co., Mich.



Report of the Vermont Bee-Keepers' Convention.

BY M. F. CRAM, SEC.

The meeting of the Vermont Bee-Keepers' Association was held at Vergennes, Dec. 18, 1901. It was a joint meeting with the Horticultural Society, they holding their meeting the day before, with a joint session in the evening.

The meeting was opened with prayer by H. L. Leonard; the secretary's and treasurer's reports were read and adopted; and the following committees were appointed by the chair: On nomination, H. L. Leonard, W. G. Larabee, and R. H. Holmes.

R. H. Holmes and M. F. Cram were appointed to confer with a like committee of the Horticultural Society, to see if the two societies would best unite and report at the next convention.

CAUSE OF RECENT WINTER LOSSES.

W. Blackmer—The loss was caused by dysentery. The disease was caused by young queens laying in winter, and

by being confined for too long a time without a flight.

W. G. Larabee asked why bees die with honey close to the cluster. The cause is not known.

A. M. Hill inquired whether to winter his bees in a cellar with the temperature 32 to 38 degrees, or in his fruit house. He was advised to do neither. Mr. Leonard said he would not risk his bees in a cellar where there was frost or that lacked ventilation.

Mr. Lowrey said that at the Vermont Experimental Station, two years ago, they lost 22 out of 25 colonies packed with sawdust on top and all around. Last season they lost one out of 16 packed with planer-shavings.

BLEACHING HONEY.

J. E. Crane said he had more or less stained honey. Last year he had bleached some of his darkest honey so it passed for No. 1. He had built on a room 10x13 feet, with glass on three sides of the room. He can bleach 1000 pounds at one time. He used sulphur, but not too much, as it gave the comb a green color. In a room containing 850 cubic feet, burn 6 ounces of sulphur, then let it stand 20 minutes. He had to do it several times to make the comb white. This season the color was caused by propolis. He showed several samples which had been bleached by the side of that which had not been bleached. Out of 6500 pounds, 500 pounds could not be brought out to No. 1. One sulphur bath would not do as much as a week of sunlight. When the combs are slightly stained, they can be brought to a pure white; but when badly stained it can not be removed at all. If he were to build another room he would have it light overhead.

G. C. Spencer—Would it turn the comb yellow?

Mr. Crane—It would not.

Mr. Holmes—What makes some honey so yellow?

O. J. Lowrey—It is caused by the bees working on corn, but the yellow largely goes off in time. The temperature has not much to do about bleaching, but it helps ripen the honey.

Mr. Crane had not been able to discover that the honey was injured by bleaching. He thought it had paid him financially for building the room.

How can this stain be prevented? was asked. The only way is to take off the honey as soon as completed. Black bees make the comb look whiter than the Italians.

CONTROLLING SWARMING IN OUT-APIARIES.

Mr. Holmes—He had some help in each yard, but that was not what he wanted. It was when he left the bees without an attendant. They must have plenty of room to keep down the swarming-fever.

Messrs. Blackmer and Lowrey remove the brood and let the bees go back on starters or full sheets of foundation.

Mr. Lowrey uses queen-excluders 14 by 2 inches.

Mr. Larabee thought the swarming instinct could be bred out. He had brought home from an out-apriary 15 colonies which had been run 10 years for extracted honey, and not one offered to swarm in 1900, or until late in 1901, although run for comb honey.

A vote of thanks was extended to the people of Vergennes for the use of hall and lights.

AFTERNOON SESSION.

The committee on nominations nominated the old board of officers, and they were re-elected.

WAX-PRESS—LONG-TONGUED BEES.

Mr. Crane talked on the use of the wax-press, which was very instructive. We have been losing a large amount of wax by not having proper facilities for extracting the same.

Mr. Leonard spoke of long-tongued bees, saying he had not measured their tongues, but had measured the other end of the bee a good many times, and it reached clear through his pants, and some besides.

Mr. Crane thought there was something in long-tongued bees, but it was more in the hardness of the bee. He had known that some of his queens had transmitted desirable qualities for two or three generations. He spoke of one queen he purchased whose bees had produced more honey than any other colony in the yard, and had capped their honey in a very peculiar manner, so much so that he could distinguish it after it was all mixed up with other honey.

Mr. Lowrey read a paper on the loss of virgin queens.

Mr. Holmes—There is more loss some seasons than in others.

RESOLUTIONS.

WHEREAS, An All-Wise Providence has seen fit to re-

move from our midst the wife of our friend and brother, V. N. Forbes; therefore, be it

Resolved. That the members of the Vermont Bee-Keepers' Association, in convention assembled, do hereby extend our heartfelt sympathy to our brother in his deep loss and bereavement.

The above was unanimously adopted, and voted to send a copy to Mr. Forbes, and also to record it on the journal of the Association.

A vote of thanks was extended to the Central Vermont & Rutland Railroad Co., for reduced rates of fare.

The time and place of the next meeting was left with the secretary to confer with the secretary of the Horticultural Society, and they to decide. — M. F. CRAM, Sec.

Orange Co., Vt.

Contributed Articles.

The Sale of Honey—Increasing Its Consumption.

BY C. P. DADANT.

In the article on page 88, I showed that there has been a perceptible change in the conditions of the honey market, due to the better knowledge that the people in general, or at least the better-informed classes, have of the manners of production now in vogue. On page 46, I see a quotation showing how the people can be educated to the use of pure granulated honey. This is exactly in the line of my experience, and I wish to insist a little more on the necessity for the large honey-producer, and, in fact, for the readers of our bee-papers in general, to extend their efforts in the direction of vulgarizing, or spreading, among the masses the information concerning the latest methods of bee-keeping, and the manner of recognizing good, wholesome honey.

The need of the present generation of honey-producers is not only to make their pursuit truly known, but to increase the consumption of an article the production of which has been probably increased one hundred-fold in the past 50 years.

The most potent cause of the low prices in honey has been the custom prevalent among bee-keepers to ship their crop to the large centers without previously investigating the possible chances of sale in their vicinity. Allow me to make an example of this in an altogether different line, which will probably serve well as an instance of what may be achieved by seeking a home market.

There is quite an extensive production of grapes in this vicinity. The city of Nauvoo, some 11 or 12 miles from here, is renowned for its grapes of all varieties. The bulk of the crop is shipped to Northern points—St. Paul, Duluth, Minneapolis, Chicago. We grow grapes ourselves on a comparatively large scale, having some 12 acres of vineyards, and we have often been tempted to ship our crop as the Nauvoo fruit-growers do. But after investigation we have found that in ordinary seasons, especially when there are no apples, the peddling of grapes among the farmers and in the neighboring towns would bring more per pound for the grapes than could be realized in the North, in countries where a grape is never grown, owing to the cost of shipping and distributing. We have made sure that a basket of grapes could be sold to a farmer, besides paying for the peddler's time, for more than the same basket would bring, net, on the St. Paul market. There have even been times when the grapes shipped to those common points brought so little money that it would have paid the shippers to have crushed them into wine, even if they had only been able to sell this as vinegar.

On the other hand, some seasons, when the crops in the large producing districts were small, the prices in those Northern cities was away beyond what could be secured here, so that the success of sales has resolved itself in watching the markets, but especially in first trying the home sales on as large and extensive a scale as possible.

The producer of corn, oats, wheat, the hog-raiser, the horse-breeder, do not need to hunt about for a market, because they have daily reports of the least fluctuation, and they find dealers in the commodities they produce right at home, in every town. But the growers of grapes, as well as the producers of honey, are in no such circumstances.

So they must take more pains if they would be sure of securing the best prices that their goods will command.

To find a home market it is necessary to push it, but when it is properly canvassed one will be surprised at the amount that can be disposed of. It is, however, useless to expect the same success every season. Many things go toward making or injuring the sale of an article, and one can not expect that the demand will be the same each year. If the fruit crop is large, both honey and grapes would be of slow sale. But there is always a very fair market for a properly-packed article, offered in a particular manner, with a good guarantee of purity.

The fact is, that no matter how careful you are, how diligently you canvass the retail stores, and the homes of your neighbors, you will find that some articles in your line will still be brought from the large centers for sale in competition with your own product. But what a loss to the producer when his goods have to go to the large market and work their way back again, through the commission man, the wholesale house, via the railroad both ways! If it is not your own honey, it is perhaps that of another producer just as far away as you are, and if this product comes in competition with yours at a low price, you may be sure that he has not realized much on his shipment. How many of my readers have shipped honey to a large city and have been sorry for it. And perhaps they have laid the blame of the low price on the commission man. But let them remember that the fault is mainly theirs, because they have not taken sufficient pains to seek customers. Perhaps their very next-door neighbor would have purchased honey if they had only offered it at a reasonable price and in neat shape.

In seeking a home market, however, there is one stumbling-block, that is, the possible competition of two or more producers in the same goods. This competition will not assume an unpleasant shape, if the producers understand their interests enough to join hands and agree on prices. This is where the local bee-keepers' association becomes useful. A judicious discussion of conditions will readily point the prices at which goods may be sold in any locality to satisfy both producers and consumers.

There is nothing impracticable in the points I have shown. The only thing needed is to take hold of this matter in the right way. There are plenty of associations at work, and many bee-keepers are doing that which I would like to see the great mass do—seek an extensive home market for their product.

Hancock Co., Ill.



Forerunners of the Movable Comb.

Gleaned principally from *Bienenvater, Imkerschule*, and other German and Austrian bee-papers.

BY F. GREINER.

As we have it in use to-day, the movable comb is not the product of one man's brain. We Americans give Father Langstroth all the credit; the Germans feel equally grateful to Rev. Dzierzon and Baron Berlepsch for the same discovery. However, there were other men before Dzierzon, Berlepsch and Langstroth who conceived the idea of making combs movable, and succeeded more or less in accomplishing this object.

During the earlier part of the 18th century a hive was in use in Greece which might demand the name of a movable-comb hive. It was made willow-basket fashion, wider at the top than at the bottom, coated with clay inside and out. Bars were fastened across the top at proper distances to answer as comb-carriers. If it was desirable to divide a colony, half of the combs and bees were taken out and transferred to another hive. Honey-combs could be removed if wanted. It is not improbable the knowledge of these hives may have come from the Egyptians, for the Egyptians were well advanced in bee-culture long before other nations had any knowledge of bees. It will be remembered that Solon made a trip to Egypt about 600 B. C., in the interest of apiculture. The same kind of a hive is also found on many islands of the Mediterranean Sea. Della Rocha, residing on one of them, describes this hive in 1790. He also constructed and describes a two-story hive with bars.

The hive used on the island of Sicily may not have been the outcome of the desire to make the combs movable, or the brood-chamber divisible, as much as to make use of the material at hand. The hive consisted of little frames about 9 inches square, made of bamboo sticks 1½ inches thick. These frames were fastened together by fine wooden

in s, somimes as many as 25 or 30, and were coated on the outside with clay.

Hives consisting of several separate chambers were used in Sweden and England during the 17th and 18th centuries. J. L. Christ, of Nassau, describes such hives in 1781. He also made use of the bar in connection with the separate honey-chamber (super).

Raumar made many valuable discoveries regarding the natural history of the bee in his one-comb glass hive during the forepart of the 18th century. The blind Huber united a number of such combs—regular frames—by hinging them together. Thus he constructed a hive which could be opened like the leaves of a book.

Felix Pina introduced a simplified Huber hive into Austria, and wrote a work on bee-keeping soon afterward.

Propokowitz, a Russian, is said to have used a hive with a separate honey-chamber filled with regular Langstroth frames as early as 1812.

We observe, then, that Genius has been at work a long time on the problem of how to make the combs of the beehive movable, and get the most out of bees, even before Langstroth and Dzierzon were born. And, after all, had it not been for Langstroth and Dzierzon—although we may not make use of the exact appliances as they gave them to the world—we might be to-day using the old box-hive, and know but little more about bees than was known a hundred years ago.

Ontario Co., N. Y.



No. 2.—Desirability of Long-Tongued Bees.

BY PROF. A. J. COOK.

It is patent from my last article, that the length of the tongue varies in different bees, and very markedly in those of different races. It is also important to remember that the bees of the same race, and notably those of the same colony, vary but very little, as compared with those of different races and in different colonies. The yellow races possess the longest tongues, and the Cyprian and Syrian bees stand in the lead in this peculiarity.

ARE LONG TONGUES OF VALUE?

This would seem to go without saying. Is the long neck of the giraffe of importance in the desert, where the very uppermost leaves of the shrubs may stand between it and starvation? Not only the red clover, but many other flowers have long tubular corollas. In many cases whole families of plants have these long, slender flower-tubes. We all know that seasons vary greatly in favoring nectar-secretion. A cold wind, or spell of weather with low temperature, may shut up the nectar-secretion of the flowers as absolutely as winter itself. Some flowers are much more susceptible to such influences than are others. Suppose, then, that in the season of clover or linden bloom the season is unpropitious, and that later come some flowers with these long corollas, and also the genial warmth and sunshine that favors nectar-production, then plainly the bees with long tongues will come to the front, and a few hundredths of an inch in length of tongue may stand between life and starvation. The cold may chill to inaction the nectar-glands of clover, linden, and sage, while possibly some wild plants with deep flower-tubes will prove more hardy, and will yield an abundance of honey to such bees as are able to reach to it.

I have frequently seen, as have many others, the red clover swarming with yellow bees—Italians or Syrians—while not a black bee could be seen on the bloom, though the black bees were quite as numerous in the neighborhood. I have seen the same thing in observing wild flowers, in both Michigan and California. There is no doubt whatever that the bees with longer tongues are a decided advantage in any apiary. Bees with shorter tongues may still, in certain cases, gather more honey, for reasons of superiority in other directions, but not because of their shorter tongues, which are certainly never a disadvantage, but in spite of these.

The very best bee will be better in every way, and certainly will be appreciated in value if among other anatomical, physiological and temperamental peculiarities it has the longer tongue.

To breed bees, then, with longer tongues, and clover with shorter corollas, would both be of advantage, but the former would be of most service to the apiarist, for then the bees would glean from all deep-tubed flowers, and not simply from the clover.

CAN WE BREED LONGER TONGUES?

There can be no more doubt that this can be done than that the sun will rise to-morrow morning. All organisms—plants as well as animals, and all animals, from the lowest protozoan to man himself—are alike embraced under the laws of breeding. Those interested in this subject should read Miles' "Stock Breeding," or, still better, the classical work of the great Darwin, "Animals and Plants Under Domestication." All animals tend to vary. This tendency may be inherent, or, more likely, is the result of environmental Selection, either by Nature or man, will continue and fix these variations.

Through the three laws—variation, inheritance, and selection—the world is indebted for its wonderful varied life. Through the wiser, sharper selection of man, our cultivated plants and domestic animals have developed races with astonishing rapidity. The American trotting-horse has been created within the memory of those living, while the Poland-China hog—another valuable gift to the world from American breeders—is the product of but a few years.

IS THE BEE AN EXCEPTION?

I believe the bee would show exceptional susceptibility to such modification. Nature, unaided by man's keen observation and painstaking selection, has made or developed several races of bees. The Italian, the Cyprian, the Syrian, the Egyptian, the German, etc., are not species, but races of the one species—*Apis mellifera*. Where else in all the realm of life do we see so many Nature-made races as in the species of our honey-bee? I know no other example at all comparable to this. Surely, if our bee is so plastic in the duller, more plethoric hands of Nature, what may we expect when man applies the well-known laws of breeding towards its modification, along any desirable line? We have seen what man can do with the bee in color. He can add rings at will, or cover all with gold. If color were as valuable as a long tongue, we should have a still more valuable bee to-day than are our best strains of Italians.

Again, I know of no animal with such wonderfully varied organs as has the bee, and such a multiplicity of them. Glands, mouth-organs, legs, stomach, even the hairs, are marvels of varied modification. Man is only wonderful in his brain and hand, while the honey-bee has a half-score of marvels to exhibit. This has all been done in the slow, plodding machinery of Nature. Let man, eagle-eyed, take the honey-bee in hand, and with some worthy ideal—not color, which has only the virtue of pleasing the eye—in mind, and he may mold any product he may desire. This is as sure as that love will always conquer.

I know that the difficulty of controlling mating stands in the way, but the plucky breeder will easily find ways to conquer this difficulty. As I have urged for years, there is certainly a brilliant success awaiting the man of pluck and genius who will attack this problem, guided by the best that is known regarding the laws of breeding. Bates, Booth, and Blakewell had not such a field of promise, nor such preparation as he may easily gain, and yet what an enviable record they made for themselves, and what a legacy they bequeathed to the world.

Los Angeles Co., Calif.

* The Afterthought. *

The "Old Reliable" seen through New and Unreliable Glasses.

By E. E. HASTY, Sta. B Rural, Toledo, O.

BREATHING AIR FROM A PAPER-BAG FULL.

We find it nearly or quite impossible to keep from breathing for any length of time, even in poisonous gas, or with head under water. We know an attempt to breathe can only draw water into the lungs—or choking gas—yet we breathe in spite of ourselves. An excellent device to get on disobedient Nature's blind side is given on page 100. Big paper-bag full of air, and tied around a short length of rubber-tubing, the other end to be held in the mouth. This is really better than no breath, and if it could get as bad as none it would still help us keep from doing worse. If we find it necessary to stay in sulphur fumes, or fumes of

bisulphid of carbon, it's well to have this simple device in mind. I think its most valuable use would be in saving life or property at a fire. Personally, I am so intolerant of smoke that I would often be thankful for such a device at outdoor fires.

HOW TO TIE UP COMB HONEY.

I don't believe, Mr. Davenport, I should like driving nails into sections of honey, to hold them together on the road to the customer's pantry—but then I might—perhaps it's the sound of the thing that repels me. Like yourself, I also used lath crates awhile for the purpose, and quite a bit different from your style of thing. Presume I also experimented with heavy strings, although my memory on that point is not very vivid. As I never could tie a string anyhow, quite likely my string packages never won my confidence enough to be trusted to start out. But at last came the great Marconi discovery, that paper around the outside held by ordinary wrapping-twine was the right way. Don't you think, brethren, that I'm generous to give it to you "mitoud a cent?" Use newspaper sheets just big enough and lots of them, *big* lots of them. There is really a little art in rolling the sections into the paper tightly, and quite a bit of art in folding the ends without marring the outside honey. Properly done, the package will stand quite a blow on the ends, which are projecting and puffy. Page 103.

NOTE THE LONGEVITY OF BEES.

F. Brown, of Florida, wants some one to say why his champion honey-gatherers live longer than other bees. I waive the question, and hail as a valuable item the *fact* of extra longevity being attested. That is a fact we greatly need to establish before we go much further. I'm glad a competent man shifted the queen three times and observed the age of the left-behind bees. Don't be entirely dashed if daughters fail to transmit. Try granddaughters, and perhaps they will. But I'll grant that holding mainly to stock that produces uniform queens is a good plan. Page 105.

CARBOLINEUM TOO STRONG A FUMIGATOR.

Don't believe we have much use for a chemical so strong that the fumes take the skin off the painter's face. This is anent carbolineum as mentioned on page 108.

ANTS AND WET LOCATIONS.

I freely yield to Mr. Lovesy as to knowledge about ants. All we have here in Ohio are mere insect "uncles" compared with those he tells of in Utah. The suggestion to put the apiary on very wet ground seems to be a good one. A wet location is not to be chosen on its own account, however. Dry locations much the best, other things being equal. Page 108.

ROBBER-BEES AND THE ROBBED.

Yes, that's a matter on page 115 that I have sometimes longed to know; yet I have never thought of it when there were convenient means of finding out. Is the pile of dead bees in front of a hive from which robbers have been repulsed all robbers? or do robbers in the last extremity do their best to kill? If they try to kill of course they part of the time succeed. 'Specs now we shall hear.

THE BOTTOMLESS CELLS OF STINGLESS BEES.

You didn't say whether the comb you got with the little stingless bees was paper or wax. If of paper perhaps the seemingly bottomless cells were not exactly so in fact. Capped brood of our own paper wasps is in one tier only, but only one end is ever opened. No good, the door-keepers among our bees would vote the Mexican tactics of stopping the door all up with one's own body. Business-end pointed away from the enemy. But stingless bees stand off enemies by biting them; so their tactics just fits their structure. Some of them have jaws that will snip a hair off quick as a flash—and bite so terribly, and "go in" so boldly that the man who gets among them votes their stinglessness to be in the nature of a humbug. As belligerents they seem from reports to be about as fierce as ants; and if ants could fly we would keep at a pretty respectful distance. Very interesting (and all in our line) to see bees carried to southern Mexico to pollenate coffee-trees and fruit-trees. Page 115.—[It was a wax-comb, of course, else we would have mentioned it, Mr. Hasty.—EDITOR.]

The Premiums offered this week are well worth working for. Look at them.

Questions and Answers.

CONDUCTED BY

DR. C. C. MILLER, Marengo, Ill.

[The Questions may be mailed to the Bee Journal office, or to Dr. Miller direct, when he will answer them here. Please do not ask the Doctor to send answers by mail.—EDITOR.]

Closed-End Brood-Frames.

If the closed ends of brood-frames warm the hive in comb-building, are they not warm for winter also?

Granting that closed ends are desirable, why not have them in the Langstroth hive?

I have long had an idea that a dovetailed hive with the side-boards built two or more inches longer than usual, and thin end-boards mortised or let in at the right distance from the true end-piece or outside end, so as to take the Hoffman frames, but a super that takes an extra row of sections, would be a good hive for outside wintering. My plan is to get a hive that is 10-frame in size, has chaff-packed ends, and in the fall all the preparation necessary is to take out two end frames and insert in their places chaff division-boards, and place a chaff cushion over frames.

Would not this arrangement give a combination of the closed-end frame and the chaff-hive? Has such a hive ever been tested? If so, what were the results? ILLINOIS.

ANSWER.—Closed-end frames have been used in various ways, and there is nothing to hinder using them with Langstroth frames. Of course, the greater trouble with bee-glue, and the danger of killing bees, is to be considered. I think such an arrangement as you propose, or something very similar to it, has been in use more or less, beginning years ago, but the number of such hives does not seem to be on the increase.

Was It Buckwheat Honey?

I think I did well last year, considering the dry season. I started in with 18 colonies in the spring, mostly black, and increased to 54, and took off about 1000 pounds of comb honey, mostly from buckwheat. How is it that my surplus came from buckwheat, and the color is so white, and the flavor so fine, that I can sell it all for white honey? A few boxes were filled, and the body of the hives were filled, after the buckwheat flow was over; it, too, was of the same color. I think that came from what is called here "wild sunflower."

I have been able to sell all my honey here for 14 and 15 cents per section—14 cents by the case, and 15 cents per single pound. A great many merchants here want to weigh the cases of honey. I tell them they may weigh it if they want to, but if they buy it will be by the section instead of by the pound. I think that is the stand all bee-keepers ought to take.

MINNESOTA.

ANSWER.—I don't know the answer to your conundrum, but if you will let me shut my eyes and guess, I will guess that your buckwheat honey came from some other flowers than buckwheat. One year a piece of buckwheat was close to my house, and I could see the bees working on it a little sometimes, but they never stored enough from it to give a smell of buckwheat to the surplus, and that's about equivalent to saying that they didn't store anything from it. Buckwheat is by no means reliable as a yielder in all places, even when it blooms abundantly. Possibly the wild sunflower was in bloom at the same time as the buckwheat, but I'm not sure about the color of sunflower honey.

Foundation Starters—Queenless Colony, Etc.

1. If I use comb-foundation starters and put them in the frames some time before I use them, will the worms be likely to bother them? If so, can I prevent it?

2. Last fall I had a queenless colony; it had several queens hatch out, I think, but the drones were all gone. Afterward, every drone-cell in the hive seemed to have six or more eggs in them. Was it a no-account queen, or laying worker, or what?

3. I bought a full-blooded untested Italian queen, and she laid all right for some time, and then disappeared. Do

you suppose she died, or they killed her? There were several young ones sealed up when I looked in the hive, and they hatched out about the same time as the one previously mentioned. I united both with one, and I thought it had a good hybrid queen. I looked in the hive yesterday (Feb. 24) and found what drone-comb they had was full of young drones, and some able to crawl about. They looked like full-blooded Italian drones. Do you suppose they have one of those young Italian queens? If so, do you think she can ever be of any account? If not, what would I best do? There are a good many bees now.

4. I have a colony of rather short bees, and they don't look like Italians, hybrids, or blacks. They almost try to sting a shadow, and store more honey than most of my other bees do. I don't know where they came from. Can you guess what race they belong to?

5. Sometimes I see blacks, and 2 or 3 banded bees in the same hive. Have they the same mother? ALABAMA.

ANSWERS.—1. No, there will be no trouble whatever.

2. Laying workers.

3. I don't know the cause of the queen's death. You can hardly expect any good from the colony, and the best thing is to unite it with another.

4. No, I don't know.

5. Yes, the same mother may produce bees that look very unlike. When an Italian queen mates with a black drone, the worker progeny may vary all the way from pure Italians in color to pure blacks.

Bee-Houses and House-Apiaries.

I live in the city, and can not keep bees unless I keep them in a bee-house; nor can I devote much of any time to them during working hours; so I wish to keep them as nearly non-swarming as possible. I have a fine little grove of young trees in my yard—a nice place to keep bees. There is plenty of white clover here, and but very few bees around. I have the "A B C of Bee-Culture" and "Bee-Keepers' Guide." I can not make a cellar that will be suitable to winter bees in, on account of it being somewhat low and springy. I see in the books that a good bee-house will be all right if made right, and I have decided to make one next summer, so as to have it ready for the bees when I put them into winter quarters. I have also decided to use the deep or Jumbo hive, and to run for extracted honey.

1. Will the Jumbo in the bee-house make them practically non-swarming?

2. I have thought of keeping the house warm with hot water when it got too cold. Will that do any harm to the bees if the temperature is kept between 40 and 46 degrees with hot water?

3. Will it need to be so warm if I put a casing around the hive, and a good cushion on top?

4. If I divide each colony into two colonies, will there

be any danger of swarming the same season, providing I divide just before they get ready to swarm?

5. Would you advise using the shallow extracting super on the Jumbo hive, or a division-board in the brood-chamber, and extracting often enough to keep the bees working?

6. Will it be advisable to feed in spring with a division-board feeder so as to stimulate brood-rearing?

7. Will a bee-house 10x12 feet, inside measure, by 8 feet to the rafter-plate, be large enough for 24 colonies?

8. How much more extracted honey will a colony produce than comb honey?

9. Where can I get insurance on the bees and supplies I have on hand?

10. Have the plans for a good bee-house changed since the "A B C of Bee-Culture" gave its plan for building? If so, please give plans.

11. Would you advise Italianizing my bees?

I hope you will excuse me for asking so many questions, and taking up so much of your time. MINNESOTA.

ANSWERS.—1. It is hard to tell just what will be the case with you. Some report almost entire freedom from swarming with the Jumbo; but with me it seems but little better as to swarming than smaller hives. Yet your working for extracted honey makes an important difference.

2. It depends on how you use the water. If you carry vessels of hot water into the house, letting them stand open, it will not do at all. It will be all right if you use hot water pipes, or if you use jugs of hot water tightly corked, or if you use the hot water closed in any way so there is no chance for any vapor to escape in the house.

3. It will make some difference, but not such a great deal.

4. It will help, but will not be a sure preventive.

5. Use shallow extracting frames, and leave the brood-chamber undisturbed.

6. Until you are an experienced bee-keeper you will do well to let stimulative feeding alone.

7. Yes.

8. I don't know. The estimates of different persons run all the way from saying there is no difference, up to more than twice as much.

9. In other countries there are special insurance companies connected with bee-keepers' societies, but I know of no such companies in this country. The best way for you to do is to inquire of insurance agents in your neighborhood.

10. I think there is no material change.

11. Yes, by all means.

I am almost sorry you did not make out the even dozen by asking me another question, that is, whether I would advise you to build a bee-house. If you had asked that question I should have told you that while some have been successful with house-apiaries others have not, and that the last I knew about it the one in "A B C of Bee-Culture," shown with eight sides, had no bees in it. The only reason I don't tell you this now is because you have not asked the question.



Bee and Honey Statistics.

In reply to inquiries, Editor Root gives the following interesting figures in Gleanings in Bee-Culture:

There are no data as to the number of pounds of honey and beeswax exported from the United States, and I can, therefore, give you no information. In a good year California might produce 200 cars of honey, Colorado somewhere about 40 cars, and Arizona 20 or 30. New York is another good State, but probably does not produce, all told, to exceed 100 cars. But the honey is not exported from New York, it being consumed largely in the country where it is raised.

There are something like a thousand members of the National Bee-Keepers' Association.

The estimate of the number of pounds of honey produced in the United States is somewhere about as follows: For comb honey, 50 million pounds; for extracted, about 125

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million, or a total money value of from eight to ten millions of dollars.

Capt. J. E. Hetherington of New York, and W. L. Coggshall, are the two most extensive bee-keepers in the United States. The former is credited with owing 3,000 colonies, and the latter about 2,500.'

Shaking Bees from the Combs.

There is a good deal in doing it just right. Probably no way is better than that given a number of times by G. M. Doolittle, with whom it is probably original. He gives very minute instructions in the Progressive Bee-Keeper as follows:

With me it is very easy to rid the combs of bees by shaking, especially if each frame is filled with comb as that the same is attached to the bottom-bar the whole length. Where combs are not so attached, there will always be a few bees between the bottom-bar and the comb which will stay there no matter how the frame is shaken, and these will have to be brushed off. Desiring to take a comb away from the bees, I place the projecting ends to the frame on the ends to the middle fingers of each hand and then, with a quick upward stroke, throw the ends of the frame against

the ball, or thick part of the hand at the base of the thumb. As the frame strikes the hand let the hands give a sudden downward motion, which makes the shock still greater. As the frame strikes the fingers it is again thrown back against the hand, and so on until all, or nearly all, the bees are off.

The principle is that the bee is on guard all the while to keep from falling off downward, thus holding on tenaciously so as not to be shaken off by any downward motion. By a sudden stopping of the upward and quick downward motion, the bees are thrown off their guard and dislodged in an upward direction. In this way I have no trouble of shaking every black or hybrid bee off; and if the Italians are disturbed enough to cause them to fill themselves with honey, they can be shaken off the combs about as easily as the black bees. But even if we cannot afford to wait until they are filled with honey, nineteenth-twentieths of them can be shaken off, when a bee-brush will easily take off the rest. To any one not used to this way of shaking, it may appear to be a little awkward at first; it will soon become easy, and after once becoming used to this method none will be willing to use any other.

Hand-Picking Drones.

Mr. Doolittle hand-picks his drones. In my opinion it is extremely doubtful that any (other) man will be successful in picking out the drones which are superior. Is there any bee-keeper anywhere who can with any degree of certainty pick out a superior queen from a batch of them, just by her looks? She may be yellow; she may be without fault and blemish as to outward appearance; but who can tell what her workers will be! Is it any different with the drone? "By their work ye shall know them." But in case of the drone, he is gone when you see his work. It seems improbable that we will gain anything by hand-picking. In all probability nature will attend to that part better than man can hope to do. The very best we can do is to select the mother of our drones.—F. GREINER, in the American Bee-Keeper.

Apis Dorsata.

Interest in the introduction of this big bee is not what it was a few years ago, and the present indications are that for utilitarian purposes it will never have any direct interest for American bee-keepers. B. Hamlyn-Harris, the well-informed correspondent of the British Bee Journal, has contributed an article to the Entomologist's Record and Journal of Variation, from which the following is clipped:

About three years ago a special inquiry was set on foot to ascertain whether or not the giant Bee of India was a suitable subject for domestication. At that time I was permitted to look over various reports at the India office, and all these agree that *Apis dorsata*, mentioned generally under native names, could not be domesticated on account of its intractable character. The chief points noted are:

1. It is said to be exceedingly vicious, often attacking man or beast on the smallest provocation.
 2. It preserves the same habits and appearance wherever its habitat.
 3. It has never been known to build its nest under shelter, but mostly on isolated lofty trees or overhanging rocks.
 4. After the honey season they will desert their nests, and often travel for long periods and great distances, even crossing such mountain chains as the Nilgherris in their course.
 5. They build single combs.
 6. And are used to approach from north, south, east or west.
 7. They rarely remain in one locality for more than three weeks.
 8. Emigrating as flowers become scarcer.
- It is well known that one of the greatest obstacles to the domestication of this bee is its natural wildness and its inability to settle permanently in one spot. When we consider that *Apis dorsata* usually makes its nest in

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Order the Above Honey and then Sell It.

We would suggest that those bee-keepers who did not produce enough honey for their home demand this year, just order some of the above, and sell it. And others, who want to earn some money, can get this honey and work up a demand for it almost anywhere.

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wild and rocky country, only remaining in one locality so long as flowers abound, we shall better realize why it moves from place to place, and the importance of so doing to its general welfare. Therefore, we see that only in completely altering its natural habits could we hope to domesticate this bee, or bring it into use under other circumstances to those in which it has always lived. Also, on account of its size and the power of its flight the Giant Bee will travel as much as 100 miles before again settling down to home life.

It is not so much the honey gathered by these bees which is valuable to the natives, but the large quantities of comb they produce, which is melted down into wax, which forms a valuable article of industry in India. The hillmen do not trouble much about the honey, but are said to eat the young bees and larvae with great gusto. Another hindrance to domestication is the way they build their nests, quite in the open, entirely unprotected, and always single combs from about 5 ft. to 8 ft. in length and about 2 ft. to 3 ft. in depth. Some fine specimens of these combs are to be seen in the South Kensington Natural History Museum.

When a species of insect has been used to certain habits for generation after generation—in fact, has never known any others—it will be readily understood how difficult would be the problem presented to us did we attempt to keep such a refractory creature in confinement. The only attempt made seems to have been a failure. A queen-bee was tied by a thread to a stick and placed in the hollow of a tree, and after two or three months a very small piece of comb was found, and the experiment, proving useless, was abandoned. Since this a writer to the last Government reports says that "he had seen seven hives all well and fed for the winter," but in the spring the "little brutes" decamped by twenty or thirty a day, until each queen in turn left the hive in disgust. Clipping the queen's wings, as done in modern bee-keeping, would prove fatal to *Apis dorsata*. On account of her uncontrollable character she would probably be lost.

The question arises, if we cannot domesticate *Apis dorsata* itself, could we by judicious crossing attain the desired end? The best answer to this question will, I think, be found in the fact that European bees exist which are closely allied to a species found in Northern India, which never crossed with *Apis Indica*, very similar to our European bee, with which domestication might be a success, but if any real advantage would arise therefrom or not is doubtful, and no doubt can remain that the facts relating to *Apis dorsata* must forever bar the way to domestication.

Germ that is Killing the Market for Extracted Honey.

W. W. McNeal, in the American Bee-Keeper, says it is not one outside of bee-keepers themselves. He strikes pretty close to the truth when he says:

Now, bad as glucose may be, the germ that is sapping the life of trade in honey finds its abiding place in unscrupulous methods of production! To people of taste and refinement the quality and general appearance of extracted honey in so many instances reflects on the producer such slovenly habits as to be in reality reprehensible.

The man who produces thin, unripe, unstrained or dirty honey, and palms it off on another is just as deserving of censure as one who puts in glucose and calls it honey. The effects are the same in both cases, for both rob honey of its rightful constituents.

Apiculture in Chile, S. A.

I am situated near 38 degrees, while the whole territory extends from 18 deg. 40 min. to 55 deg. 50 min. In the extreme north rain never falls, and consequently no place for bee-keeper nor bees; whereas, in the region south of this—about latitude 40 deg.—rain is constant all the year round, not the most desirable location for the bee-keeper, either.

It may interest some readers to know that the mean rainfall varies from 12 millimetres

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This year it will publish articles by him which no farmer can afford to miss. Farmers who have been following his plan have been raising big crops every year in spite of drouth. Mr. Campbell has just published a manual of soil culture which fully explains his methods. This readable volume, together with six month's trial subscription to **The Twentieth Century Farmer** will be sent on receipt of fifty cents.

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in latitude 27 deg. to 2,860 millimetres in latitude 40 deg.; further south, to latitude 53 deg. 10 min. (Punta Arenas) the rainfall decreases 550, of which one-fifth is snow. My own experiences extend to regions from latitude 33 deg. to 39 deg., and I flatter myself in thinking my own situation about the happy medium as to extremes of temperature, moisture, etc. After twelve years' experience here I am prepared to say that the swarming fever referred to in the "Revue" is by this time so much eliminated with me, that I can work under quite as high pressure as at home. When I first commenced the bees would swarm in spite of extractor or unlimited working room, and, of course, to work for sections was out of the question. Now I get 2-lb. sections worked with greater certainty than the 1-lb. are at home. Of course, I use the "B.B.K.A." standard frame. All the bees I meet with in apiaries here are the Italian race.

With me, swarming begins about the latter part of November. Honey begins to come in as surplus in December, the heaviest months being January and February.

The statement that the produce of 500 colonies amounted to 36,400 pound of honey goes to confirm what I have been trying to drive into the heads of some of the bee-keepers here—to-wit, the mistake made in laying down apiaries of over 100 colonies; the vogue here is 500 or 1,000 and upwards. Notice what follows in the article referred to, "ninety-five colonies gathered 18,000 pounds." I have taken 250 pounds to 300 pounds in my own apiary from one hive when no swarm has issued, and over 150 pounds from a swarm hived in December. The statement that the native Chilean does not eat honey is not my experience.—J. R. W. HOLE, in the British Bee Journal.

Young Larvae for Queen-Cells.

In Gleanings for July 1, 1900, in a footnote on an article of mine, you say, Mr. Editor, "We have heretofore assumed that larvae just hatched, or larvae not more than three days old, was the preferred age; but there is a case where the bees evidently had a preference for the five-day limit." The fact that this continues to be quoted in foreign journals, and that it is likely to be misunderstood, makes me now refer to it. While you may have meant all right, there is danger that you may be understood as meaning: "In this case the bees preferred larvae five days old to anything younger." This is not true. The only possible preference at all in that line would be expressed thus: "The bees preferred to wait till some of the larvae were to old for good queens, rather than to start all cells earlier." Now let me give the truth deduced from my investigations—the truth that I think any one will deduce from any fair investigation—it is this: Bees will not start queen-cells with larvae as old as three days when younger larvae are present; but they will continue to start queen-cells after all the larvae present have become too old for that purpose. Will my good friend of the Review say whether he believes this to be the truth?—[I accept your amended correction.—Ed.]—Stray Straw in Gleanings in Bee-Culture.

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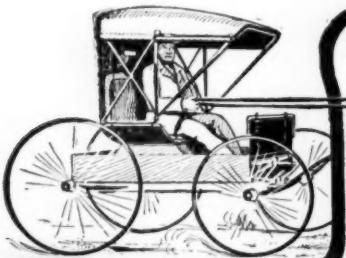
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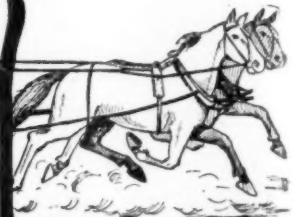


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GENERAL ITEMS

A Beginner's Report.

I am a young bee-keeper and appreciate the American Bee Journal very much.

There is only one bee-keeper in this neighborhood besides myself. I started with one colony, which swarmed 4 times, and now I have 5. I did not get any surplus honey but I think my bees are wintering well.

As I did not know much about bees I thought I would give them a good letting alone.

JOHN A. DUNN.

Reno Co., Kans., Feb. 20.

Early Spring.

Spring is opening up very early here for this country, and the bees, as a rule, except perhaps Salt Lake County, have wintered fairly well, and a fair, average season is looked for by our bee-keepers. While there is no drawback in sight, the only fear is drouth or grasshoppers.

E. S. LOVESY.

Salt Lake Co., Utah, Feb. 21.

Nailing Up Shipping-Cases.

Mr. C. Davenport says he can now put 2 non-drip shipping-cases together in less time than he could one before. Now my way to put slats in the bottom, nail on the 2 ends, then I take a board that just goes inside of a case, 3 inches wide, cut slots in it the space of the sections, then slip the strips into these slots and nail each end, then take out the board and nail the center, and then nail up the case.

S. D. BUELL.

Branch Co., Mich., Feb. 20.

Bee-Keeping in Oklahoma.

We had a very poor season in northwest Texas the past season, although my loss is only 10 percent, while that of others has been 50 percent.

I am now moving my apiary near the Wichita Mountains, in Oklahoma Territory, I being one of the lucky ones to draw a fine place through the opening up of the Comanche Reservation. I think I have a fine location for bees, and, as before, will give my attention to bees and fruit-raising.

I am the first man to establish an apiary in the New Eldorado; it will be watched with interest by other bee-keepers who want to bring bees to Oklahoma Territory.

J. W. ADAMS.

Montague Co., Tex., Feb. 20.

Heavy Winter Losses.

After a month of very severe wintry weather I find I have suffered the greatest winter-losses in my experience. I have lost at least 60 colonies, or $\frac{1}{2}$ of my bees, and most of the rest very weak, and if the weather does not moderate I fear the loss will be much greater.

My loss was caused by being confined so long without a flight on stores containing honey-dew.

The prospects for 1902 are gloomy. It has been nearly a year since we have had a good rain.

We have not had any honey since 1899; we had some honey-dew in 1900, also a little last year.

I will continue reading the "Old Reliable," anyway. I have been a cash reader since I have been a bee-keeper, nearly 7 years now. I commenced with 2 box-hive colonies, and increased to 202 colonies in 5 years, all in Langstroth dovetailed hives. I have decreased considerably in the last two bad years.

I am the only member of the National Bee-Keepers' Association in the Indian Territory, I am sorry to say.

I let merchants handle honey on commis-

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sion for me and two of them refused to settle. I reported them to Hon. Eugene Secor, and the money came forthwith, so I saved enough there to pay my membership several years. "A word to the wise is sufficient."

Let every one that reads this not only pay up his subscription (if in arrears), and a full year in advance, but inclose \$1.00 membership fee to the "National," and make Editor York and yourself happy. J. T. HAIRSTON.

Indian Territory, Feb. 20.

Deep Snows—Wintering Well.

We have had the deepest fall of snow for several years, about 8 inches on the level. It did not drift very badly here, but delayed trains about a day.

Bees went into winter quarters in the best condition since I have been in the bee-business (1896).

They have not had many flights, but I think they are all right. W. H. MEANS.
Greenwood Co., Kan., Feb. 21.

Evidently an Error.

Mr. Editor:—Did the printer take liberties with Mr. Bingham's copy, page 156, or are we to understand that 25 degrees is an "ideal" temperature for bees in a cellar? IDEALIST.

[Yes, it is an error. It should have been 35 degrees instead of 25.—EDITOR.]

Entrance Feeding of Bees.

It is near feeding-time for the colonies out of stores and for stimulative brood-rearing. I have been feeding some old sorghum honey I bought cheap. I make an entrance-feeder on the plan of the Boardman. I take a round tin can 8 inches across, run a gauge-mark around it about $1\frac{1}{2}$ or 2 inches from the bottom, and cut it off. This makes a dish nearly 2 inches deep and 8 inches across; almost any old dish will do. Then make a box with two points to run into the entrance with a loose cover; the box must be tight, and great care taken not to let robber-bees get a taste. Liquefy the feed by mixing water with it. The dish must be full of old comb to keep the bees from drowning.

C. H. AUSTIN.
Eddy Co., New Mex., Feb. 21.

Poor Prospects for Honey.

It is now the time of year when a tolerably safe report can generally be made concerning honey prospects in this part of the State.

We have had, to date, a trifle over 4 inches of rain, and the most of it came early, and was succeeded by dry weather lasting until the latter part of January. We have had more cold weather than common this winter; little damage, however, has resulted, but it aided very much in retarding early bee-feed.

I have been to my apiary several times lately, and in traveling a section of country 30 miles in length, and observing closely on every hand, I must say that I have never seen the prospects for the apiarist much poorer than at the present. Unless rain comes soon in plenteous quantity, we will have to feed back to the bees some of last year's crop. Eastern markets, I think, will get but little California honey in 1902.

ALBERT ROZELL.
Los Angeles Co., Calif., Feb. 21.

Do Robber-Bees Sting?

Answering the question (page 115), "Do robber-bees sting?" Rarely; though very rarely indeed they do. The robbing question has always been very interesting to me. I have watched and studied it for days and weeks with pain, pleasure and profit.

The conditions in which a robber-bee is most likely to sting is when a defending bee grabs the robber by the leg and then hangs on, and hangs on, until the robber drags it clear down the alighting-board into the grass. The robber then seems to say, "Come, now, old fellow, you are as mean as I am; we are now on common ground; let go or I'll sting;" and in

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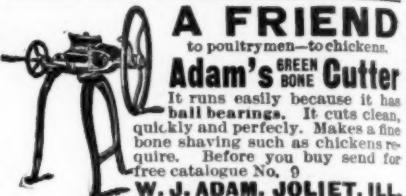
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short order it grapples the other bee and stings. But generally when the robber makes a sharp turn both take wing.

I have seen a bee in cases of robbing sting, dead or dying, and still clinging to a robber's leg. Robbers always respect the colony that makes short, decisive work of it, and summarily stings every robber that they can catch. In such cases I never could see that robbers sting back, but of course I can not say that they never do.

S. T. PETTIT.

Ontario, Canada, Feb. 21.

Fears Another Dry Year—Foul Brood.

I am afraid we are in for another dry year. Everything is shaping that way now. We have had only about 3 inches of rain so far this winter. It has looked very much like rain for two days, but the rain does not come.

I am having a sad experience with foul brood, not in my own apiary, but as deputy foul-brood inspector. The first apiary I examined of 25 colonies was a rotten mass—old hives in which bees had died out lying around in a promiscuous way. I said to the man in charge (the owner being in the East), "The only thing we can do is to burn everything." He finally gave his consent, so just at dark we piled the 25 colonies as close together as possible, piled the 50 or more old hives around them, and set fire to it. Radical cure, but a safe and permanent one.

Other apiarists which are not so bad we will give the McEvoy treatment.

B. S. TAYLOR.

Riverside Co., Calif., Feb. 23.

Worst Dry Year Since 1864.

This will be the worst dry year since 1864 in Southern California. Even in the northern part the rainfall is short. I would not advise any bee-men to come here and go into the bee-business; the seasons are too uncertain, and they would only meet with discouragements.

M. H. MENDLESON.

Ventura Co., Calif., Feb. 18.

CONVENTION NOTICES.

Chicago.—The next meeting of the Chicago Bee-Keepers' Association will be held in the Briggs House, Chicago, April 3, 1902, afternoon and evening. A full attendance is desired, as important business comes before the Association. Let all come and enjoy a good social time, and banquet in the evening; 50 cents a plate. The ladies are especially invited to be present, and bring their fathers, husbands and brothers. Dr. C. C. Miller has promised to be present.

HERMAN F. MOORE, Sec.

Utah.—The Utah State Bee-Keepers' Association will hold its annual convention in the City and County Building, Salt Lake City, April 5, 1902, at 10 a.m. This promises to be an interesting convention. All are invited. It is desired to form an exchange for the protection and benefit of our bee-keepers. Come and aid a good cause. It is expected that every county will be represented.

J. B. FAGG, Sec.

Deserves Its Success:—It is always a pleasure to us to notice the growth of any concern which builds up its business by honorable methods and first-class goods. In this day it is hardly possible for any concern to succeed for any length of time unless the above is their policy. When any concern starts as did our advertiser, the Reliable Incubator Co., of Quincy, Ill., almost 20 years ago, in a modest way, and their business grows constantly from year to year until it becomes one of the very largest concerns in the country manufacturing incubators and brooders exclusively, one cannot but believe that they make the right kind of goods and treat their customers in accordance with the Golden Rule. Probably no incubator in the world has a higher reputation than the Reliable. It has taken many highest awards at various Expositions, as for example, the Columbian at Chicago, Cotton States at Atlanta, Trans-Mississippi at Omaha, International at Brussels, Universal at Paris, where they not only took highest award but the grand prize. They

have the first premiums at State Fairs and Poultry Shows almost without number, and the Reliable is always a favorite wherever exhibited. The Company is already planning great things for the Louisiana Purchase Exposition to be held in St. Louis in 1903.

One reason why the Reliable has always been a successful machine is that its makers are practical poultry people, having owned and operated extensive poultry-yards for many years, even before engaging in the incubator business. Every improvement which has been put out on the Reliable has first been tested many times in the Company's own establishment. The present poultry-yards are an immense plant covering 13,500 square feet of floor space. They raise about 5,000 chickens annually and every bird shipped from the Reliable Poultry Farm is guaranteed in every way. Send for the Reliable catalog. Address, Reliable Incubator Co., Quincy, Ill., and mention the American Bee Journal.

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50 good, heavy colonies in 8-frame, dovetailed hives, well painted; most of the bees show Italian markings. Prices: Single colony, \$6.00; 5 or more, \$5.50 each. They are located within 12 miles of Kankakee, Ill. Can be shipped April 1. Address,

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Northrup, King & Co.—We have just received from these advertisers a copy of their new seed catalog for the current year. This is a very interesting book, and every one, even those who buy seeds in a small way, would be well repaid by writing for a copy. Some of the many interesting features are as follows: On page 1 the letter from a leading railroad, offering half-freight-rates on certain seeds. This will be a direct benefit to buyers in certain sections. The statement regarding Corn Insurance, on page 15, is also novel and their illustrations of corn, made from actual photographs, speak for themselves. On page 15, the Grading of Grass Seeds, illustrated by microscopic pictures, is a revelation. Many seed-buyers evidently need education along this line. Very many of the illustrations all through the book are made from photographs, and the general arrangement of the book is commendable. Mr. Northrup is recognized as a high authority in the seed-trade, and is president of the American Seed-Trade Association. Write to Northrup, King & Co., Minneapolis, Minn., for one of the catalogs, and mention this paper.

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HONEY AND BEESWAX

MARKET QUOTATIONS.

CHICAGO, March 7.—The decline noted in last quotations are still more pronounced at this time, large offerings of Western comb are pressing for consumption which are difficult to place. Prices are nominally 13@14c for the best white, with travel-stained and light amber, 10@12c, that which is candied selling as low as 7c, with the partially candied at 9@10c. No great amount of dark honey is offered. Extracted is steady in price but slow of sale, white, 5@7c; amber, 5@5@5c; dark, 5c, according to what it is gathered from and quality. Beeswax in urgent demand at 30c.

R. A. BURNETT & CO.

CINCINNATI, March 6.—The market in extracted honey is good with prices lower. Amber, for manufacturing purposes, brings from 5@6c; better grades from 7@8c. Fancy comb honey sells at 16c; lower grades hard to sell at any price. Beeswax strong at 27@30c.

THE FRED W. MUTH CO.

ALBANY, N. Y., Feb. 21.—Our market has not been so empty of comb honey in a long time. Fancy white comb, 15@16c; No. 1, 15c; dark and buckwheat, 13@14c. Extracted, buckwheat, 6c. Beeswax, 30c.

H. R. WRIGHT.

BOSTON, March 8.—We beg to report a fairly good spring demand for comb honey, and from present indications stocks will clean up in good shape. Prices range as follows: Fancy, 16c; No. 1, 13@13@14c; No. 2, none. Extracted is in good supply and moves slowly; California, 7c.

BLAKE, SCOTT & LEE.

CINCINNATI, March 7.—The general tone of the honey market is lower. Water-white comb honey sells from 14@14@15c; it is hard to obtain 15c for extra fancy. Extracted has weakened a little, and sells at 5@5@5c; fancy, from 6@6@6c.

C. H. W. WEBER.

NEW YORK, March 8.—Comb honey is now pretty well cleaned up, and what remains on the market is nearly all fancy and No. 1 white honey. The demand is fairly good at following quotations: Fancy white, 14c; No. 1, 13c; No. 2, 12c. Extracted remains dull at unchanged prices with plenty of supply. Beeswax firm, 29c.

We have just received the first large shipment of comb honey from Cuba; some in tall sections, packed 20 combs to the crate and some in square sections packed 32 combs to the crate, glass front on one side, plain, no-bee-way section. The honey was packed in shipping-carriers, containing 8 of the large and 9 of the small crates respectively, and arrived in first-class condition. The flavor of this honey is very fine, and as to the quality—some of it is fancy white, while others is of a yellowish tint.

HILDRETH & SEGELEN.

SAN FRANCISCO, Feb. 12.—White comb, 11@12c cents; amber, 8@10c; dark, 6@7c cents. Extracted, white, 5@6c; light amber, 4@5c; amber, 4@—. Beeswax, good to choice, light, 26@28c; dark, 24@25c.

Considering the limited quantities offering there is a fair trade in progress, both for shipment and local account. Quotable values are without change, but market is moderately firm at the prevailing figures

WANTED. EXTRACTED HONEY—either large or small lots; parties having same to offer, send samples, and best prices delivered at Cincinnati, Ohio. We pay cash on delivery. **THE FRED W. MUTH CO.** 10Atf Front and Walnut Sts., CINCINNATI, O.

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The picture shown herewith represents the best one-pound jar for honey that we know of. It is made of the clearest flint glass, and when filled with honey, and a neat label attached, it makes as handsome a package as can be imagined. Its glass top sets on a flat rubber ring, and is held in place by a flat steel spring across the top as shown in the picture. It is practically air-tight, thus permitting no leak, which is an important thing with honey-sellers.

We can furnish these jars, f.o.b. Chicago, at these prices: One gross, \$5.00; two gross, \$4.75; a gross, five or more gross \$4.50 per gross.

If you try them once you will likely use no other kind of top or sealing arrangement for honey jars.

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Belleville, Ill., Dec. 12.

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WANTED.—Beeswax. Price, 28c cash or 30c in trade for pure average beeswax, delivered here. We want also a car of white sage extracted honey, also large lots of WHITE COMB HONEY in DANZ. sections.

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